CASE REPORT

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A case of endobronchial leiomyoma treated by sleeve resection of the right upper lobe bronchus

Bolesnik sa endobronhijalnim lejomiomom lečen *sleeve* resekcijom bronha za gornji režanj desnog pluća

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Abstract

Introduction. Bronchial leiomyoma is extremely rare. Most reported have been resected by either lobectomy or pneumonectomy. We presented a case treated by sleeve bronchoplasty without pulmonary resection. **Case report.** The presented case, 39-year-old male, had been admitted to our hospital complaining of hemoptysis. Chest X-ray showed no abnormality in either lung field, but computed tomography scan found the tumor in the upper right bronchus. The diagnosis was made by histological and immunohistochemical examination of the specimens obtained during bronchoscopy. **Conclusion.** The presented patient was treated by thoracotomy and sleeve resection of the right upper lobe bronchus with the removal of all the tumor.

Key words:
bronchial neoplasms; leiomyoma; diagnosis; thoracic surgical procedures; treatment outcome.

Apstrakt

Uvod. Bronhijalni lejomiom je izuzetno retko oboljenje. Najčešće se takvi bolesnici leče hirurškom resekcijom, lobektomijom ili pneumonektomijom. U radu je prikazan bolesnik hirurški lečen bronhoplastičnom operacijom, *sleeve* resekcijom bronha za gornji režanj desnog pluća, bez plućne resekcije. **Prikaz bolesnika.** Muškarc, star 39 godina, primljen je u našu bolnicu zbog hemoptizija. Radiogramom njegovog grudnog koša nisu nađene nikakve patološke promene ni u jednom plućnom polju, ali je CT skenom otkriven tumor u bronhu za gornji režanj desnog plućnog krila. Dijagnoza je postavljena histološkim i imunohistohemijskim pregledom bioptata tumora, uzetog pri bronhoskopiji. **Zaključak.** Bolesnik je lečen hirurški, torakotomijom i *sleeve* resekcijom bronha za gornji režanj desnog pluća, uz otklanjanje celog tumora.

Ključne reči:
bronhusi, neoplazme; leiomiom; dijagnoza; hirurgija, torakalna, procedure; lečenje, ishod.

Introduction

Primary pulmonary leiomyomas are extremely uncommon both in adults and children, constituting approximately 2% of benign lung tumors [1]. They are thought to arise from the smooth muscle of the bronchus [2]. The affected patients usually have respiratory symptoms due to partial or complete airway obstruction which deteriorate persisting asthma [1, 2] or be complicated with bronchiectasis and recurrent pulmonary infection [1, 3, 4].

Case report

A male, 39-years old smoker, was admitted to hospital due to months' long polymorphic problems in the form of productive cough with haemoptysis, feeling of languor, fatigue and haemiparesthesia (feeling of numbness experienced on the left side of his body). Chest radiograph was normal (Figure 1), while computed tomography (CT) showed intraluminal, round, clearly circumscribed lesion in the upper lobe bronchus, 9.5 × 10 × 12.3 mm in diameter, which was post contrast homogeneously coloured without mediastinal lymphadenomegaly (Figure 2). During bronchoscopic examination, a cystic, moderately vascularized tumor change was noticed on the bronchus carina for the upper lobe bronchus, which was of smooth surface, white color, and softer consistency. The surrounding was moderately hyperemic without signs of mucosa infiltration. After bronchoscopy, a histopathological examination of the tumor change led to a leimyoma diagnosis. Histologically, tumor tissue was built of

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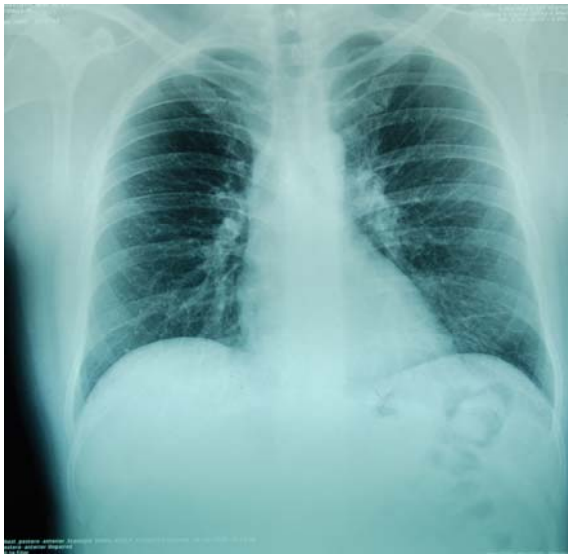

Fig. 1 Chest X-ray showed no abnormality in either lung field.

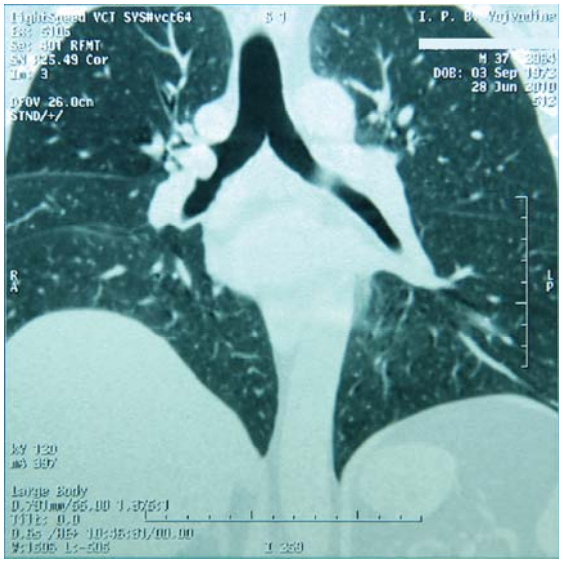

Fig. 2 − Tumor in the upper right bronchus [computed tomography (CT) scan].

intertwined bundles of spindle medium sized cells, abundant pale eosinophilic cytoplasm and elongated nuclei, yet edges that were blunt as in cigarettes. There was hyaline binder among the cells. Mitosis was not present. It was used enlargement ×10, and HE staining (Figure 3). Tumor cells were immunoreactive for desmin and alpha-SMA (Figure 4) and immunonegative for CD117, CD34, MyoD1, S-100 protein and vimentin. Due to neurological problems in the form of paraesthesia of the left part of the body, a CT examination of endocranium had been done which detected no pathological changes. After adequate preoperational preparation, the patient was operated under general anesthesia, when right anterolateral thoracotomy was performed. After cutting the initial portion of the right upper lung lobe bronchus, endoluminally was registered a smooth soft tumor, of soft consistency, whose narrow peduncle went from lower lip of bronchus carina for the upper lobe bronchus towards the intermedial bronchus.

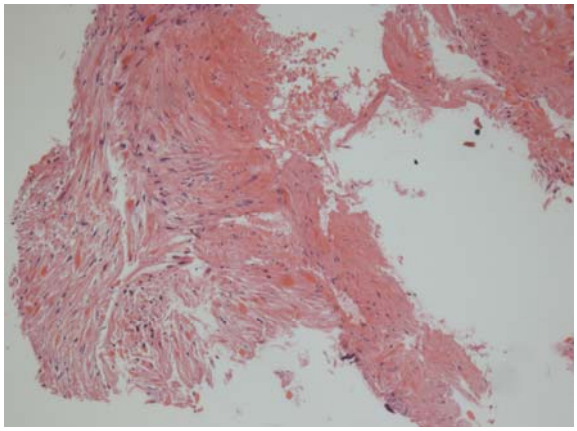

Fig. 3 − Tumor tissue [interwined bundles of spindle medium sized cells (HE, ×10)].

Circular resection of the initial part of bronchus for the upper lobe was done with tumor, wherein the section surface of the same with no tumor, as well as resectional surface of

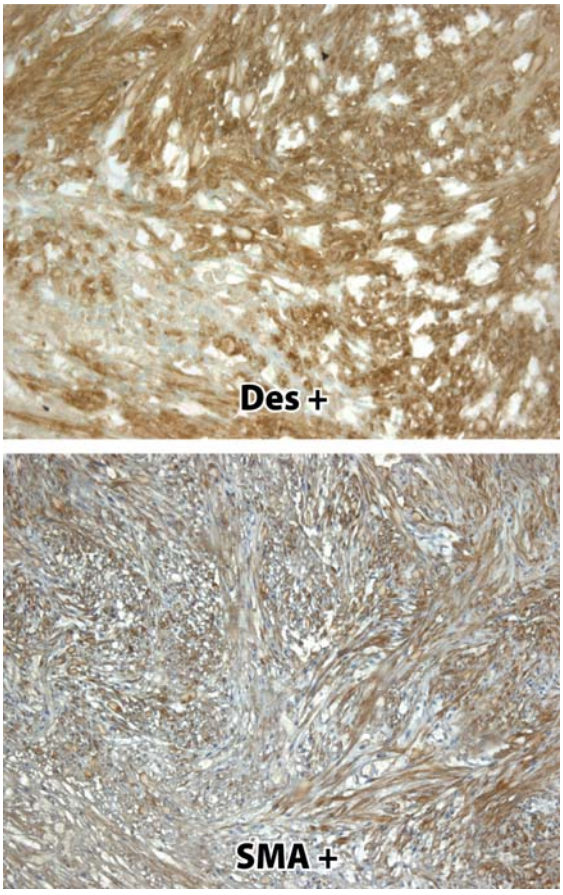

Fig. 4 − Immunohistochemical examination (×40).

the lower lip carina from intermedial bronchus were *ex tempore* histpathologically examined. After that anastomosis was performed by separate sutures. Post-operative care past with no complications. The control chest radiogram was satisfying. The control laboratory findings were within normal ranges. The definitive histopathological finding matched Hialeah leimyoma (*Leiomyoma hyalineum*).

Discussion

Leiomyomas of the lung are extremely rare and account for less than 2% of all benign tumors of the lung [1, 5, 6]. These neoplasms can occur in parenchymal, endotreacheal or endobronchial locations. Generally it seems that pulmonary leiomyomas affect females more than males with a ratio of approximately 1.5 : 1 [2, 7, 8]. Dyspnoea, cough and haemoptysis are the most common symptoms in those patients [1–4, 9]. On the chest X-ray pneumonitis is usually seen beacuse of infection, which is the result of stasis of secretion. CT scan help us to locate the tumor, but bronchoscopy is a much more helpful diagnostic procedure to define the location of the tumor, and to get histopathological diagnosis, which help us in planning the operation. When the tumor is pedunculated and small, bronchoscopic resection is also useful [10]. Bronchial leiomyomas are thought to derive from smooth muscle layer of bronchi, bronchiols, or blood vessels [11].

Conclusion

Leiomyomas of the respiratory system are essentially treated with surgical or bronchoscopic resection, depending on the location of the tumor. In some cases those tumors can be treated as conservative as possible, since the tumor is benign. In the presented case we performed a "sleeve" resection of the upper lobe bronchus, and after that anastomosis by separate sutures with the intermedial bronchus. In some other circumstances, with a secondary parenchymal destruction, leiomyomas of the bronchus may be treated with anatomic resection, like segmentectomy, lobectomy and in rare situation with pneumonectomy.

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